



First record of the genus *Caenosclerogibba* Yasumatsu, 1958 (Hymenoptera: Sclerogibbidae) from the Philippines

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Abstract: The sclerogibbid wasp genus *Caenosclerogibba* Yasumatsu, 1958 (Hymenoptera: Sclerogibbidae) and the species *C. longiceps* (Richards, 1958) are recorded for the first time in the Philippines. The discovery of *Caenosclerogibba* in the Philippines extends the range of the genus distribution from China and Japan downward to Southeast Asia. *Caenosclerogibba longiceps* is the second species of Sclerogibbidae recorded from the country.

Key words: Oriental Region; Southeast Asia; Luzon Island; sclerogibbid wasp; ectoparasitoid; *Caenosclerogibba longiceps*; new record; range extension

Sclerogibbid wasps are a small group of aculeate Hymenoptera belonging to the family Sclerogibbidae and comprising four extant and two extinct genera (OLMI 2005; ENGEL & GRIMALDI 2006b; OLMI et al. 2016). They are strict ectoparasitoids of webspinners (Embioptera), meaning their distribution follows that of their hosts (ARGAMAN 1988; Ross 2000).

In the Philippines, with only six species of Embioptera recorded (DAVIS 1940; LIT & LUCAÑAS 2014; ROSS 1951, 1955), only one species of sclerogibbid wasp is recorded: *Sclerogibba impressa* Olmi, 2005. Following the recent efforts of the first author to document the diversity of webspinners in the country, several organisms associated with the webspinners and their domicile were also observed including one additional record of sclerogibbid wasp: *Caenosclerogibba longiceps* (Richards, 1958).

Samples of *Caenosclerogibba longiceps* (Richards, 1958) were collected from laboratory cultures of the host *Oligotoma humbertiana* (Saussure, 1896) from Lian, Batangas and Pasig City, Manila, Luzon Island, Philippines (Figure 1).

Adult female specimens were cold macerated by soaking in 10% aqueous Potassium Hydroxide (KOH) solution for 24 hours. They were then cleaned in distilled water to wash unwanted undissolved internal contents, and then with 95% ethanol to remove water in excess. Finally, they were mounted on microscope slides using modified Hoyer's medium. Identification was done using the key provided

by OLMI (2005) and OLMI et al. (2016).

All specimens were deposited in the entomological collections of the University of the Philippines, Museum of Natural History (UPLB-MNH), Los Baños, Laguna. Distribution maps were generated using Natural Earth Data in QGIS 2.12.0.

Material examined. 3 females, reared in laboratory from *Oligotoma humbertiana* collected in Philippines: Batangas, Lian, Matabungkay Beach, 08.x.2014, (CCLucañas, UPLBMNH HYM-000294, 1 slide with 3 specimens); 2 females from the same host species collected from Philippines: Pasig City, Pasig-Marikina River System, 08.x.2014, (CCLucañas, UPLBMNH HYM-000293, 1 slide with 2 specimens).

Genus *Caenosclerogibba* Yasumatsu, 1958

Caenosclerogibba YASUMATSU 1958: 21 — ARGAMAN 1988: 181 — CARPENTER 1999: 219; OLMI 2005: 79.

The genus *Caenosclerogibba* is one of the five known extant genera of the family Sclerogibbidae. It is distinguished from the others extant genera by the following characters: scutellum and metanotum separated from the propodeum by a suture, 2 ocelli present and relatively small compound eyes. Currently, the genus is composed of three species which are disjunctly distributed across the tropics.

Caenosclerogibba longiceps (Richards, 1958)

Sclerogibba longiceps RICHARDS 1958: 17 (holotype: Madras, Tamil Nadu, India; Natural History Museum, London) — ANANTHASUBRAMANIAN & ANANTHAKRISHNAN 1959: 101; CARPENTER 1999: 219.

Caenosclerogibba japonica YASUMATSU 1958: 22 (holotype: Shiroyama Forest, Kagoshima Prefecture; Kyushu University Japan) — YOKOHAMA & TSUNEYOSHI 1958: 25.

Caenosclerogibba sinica HE 1984: 318 (holotype: Nanning, China, Zhejiang University Hangzhou China).

Caenosclerogibba longiceps (Richards) — ARGAMAN 1988: 181; OLMI 2005: 81.

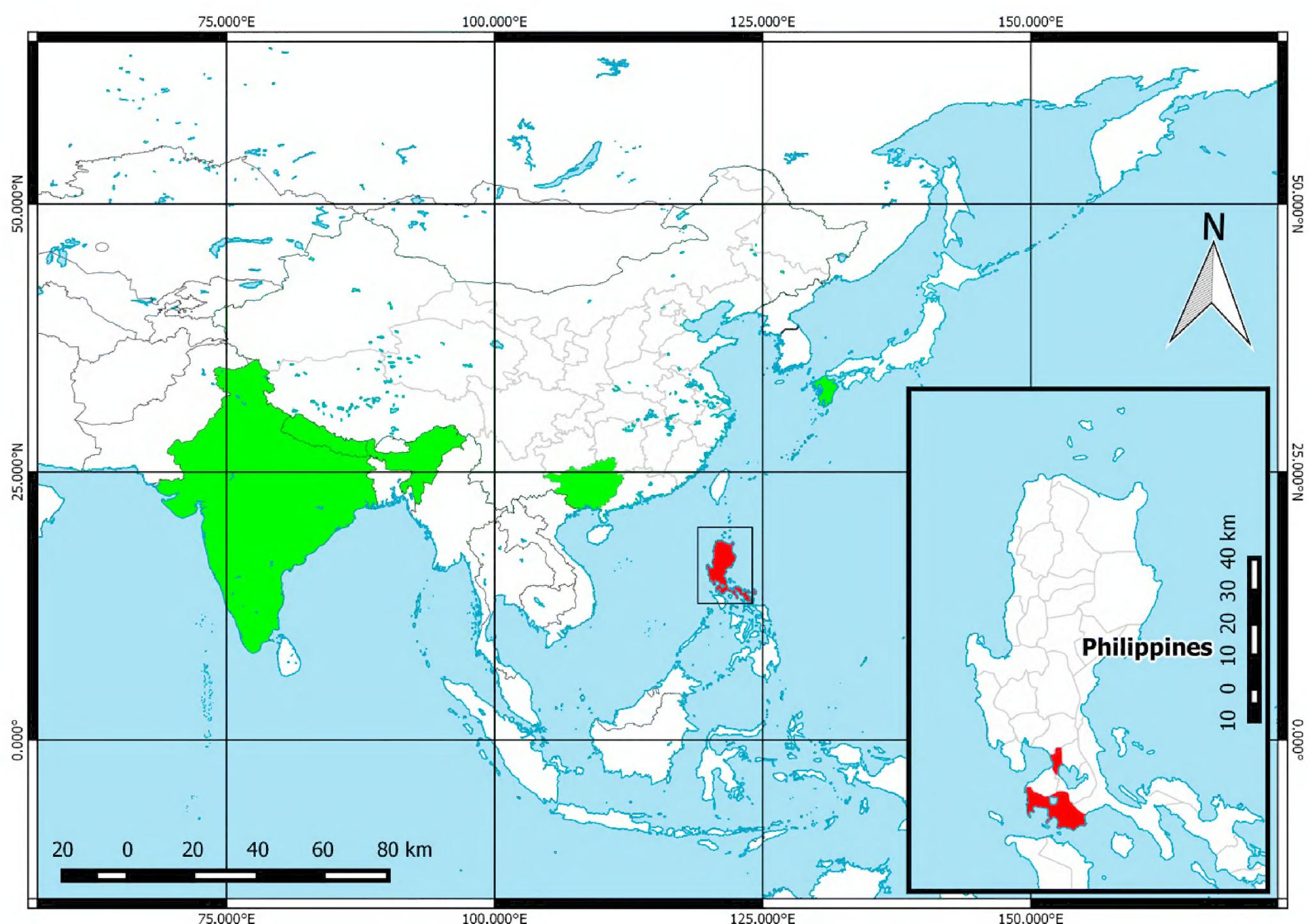
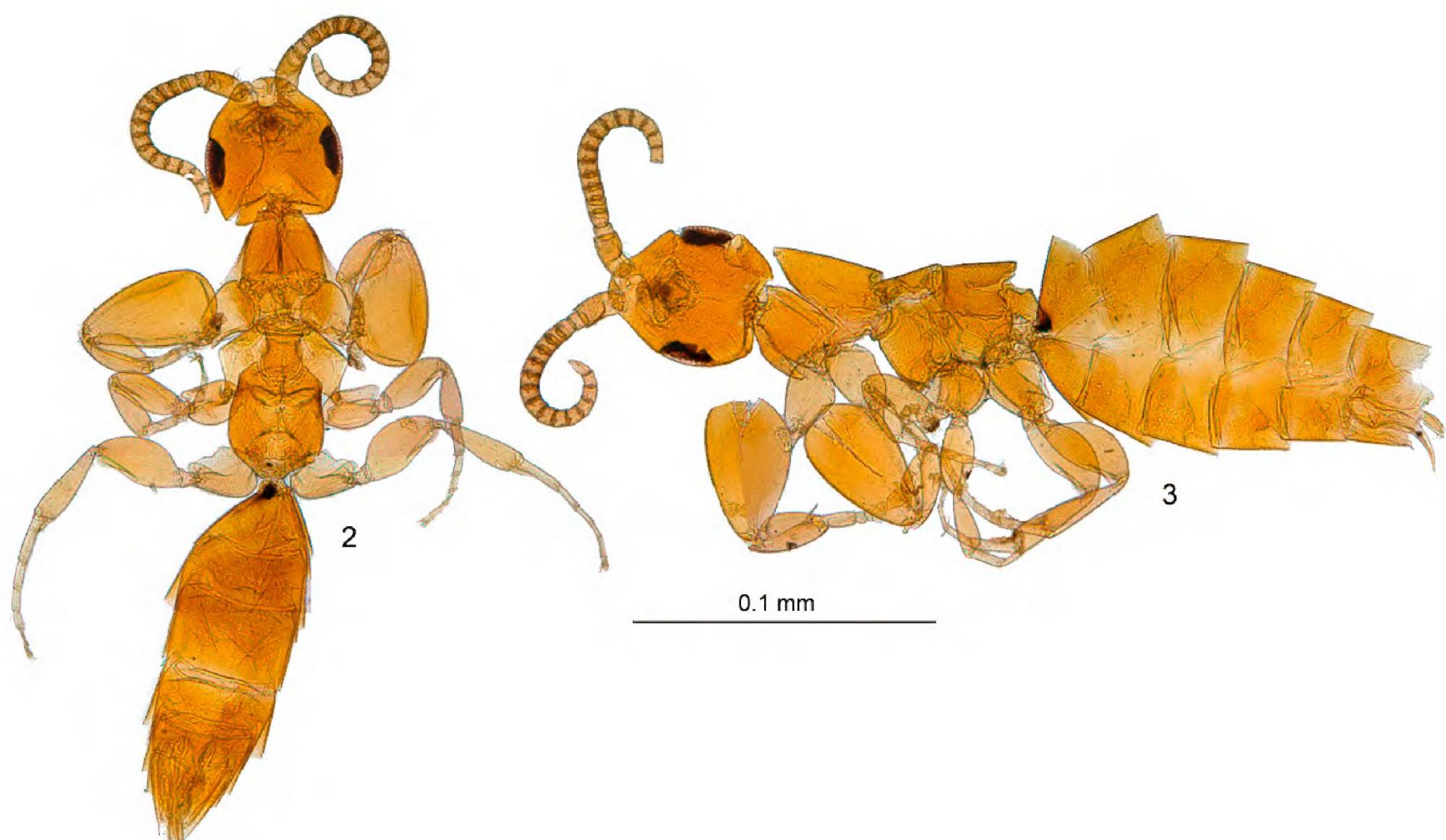


Figure 1. Locality maps. Map of South and Southeast Asia showing new and old locality records of *Caenosclerogibba longiceps* (Richards 1958), and inset: map of Luzon island showing collection area of embiid host. (Green = previously recorded locality; red = new locality records).



Figures 2, 3. *Caenosclerogibba longiceps* (Richards 1958). **2.** Ventral view. **3.** Latero-ventral view.

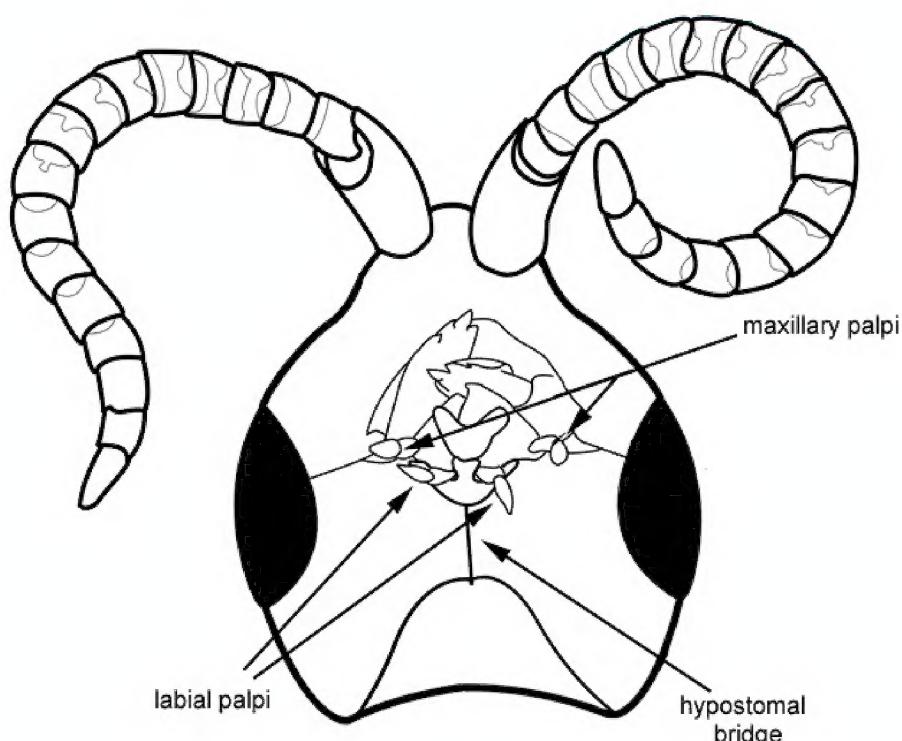


Figure 4. Head of *Caenosclerogibba longiceps* (Richards, 1958) in ventral view.

Caenosclerogibba longiceps (Figures 2, 3) is distinguished from the other species of the genus by the 2-segmented labial palpi (Figure 4). Their eyes are relatively small compared to *C. rossi* Olmi, 2005 and *C. probethyloides* Olmi, 2005, and are positioned medially on the lateral margin of the head. The species is recorded from China, Ecuador, India, Japan, Madagascar, Mexico, Nepal and Yemen (Figure 1) (OLMI 2005).

The discovery of *C. longiceps* in the Philippines extends the range of the species distribution downward to Southeast Asia (Figure 1). It is the second species of Sclerogibbidae recorded from the country and the first to be documented in Luzon Island, the other being *Sclerogibba impressa* Olmi, 2005 from Mindoro Island. It is also the

second species of the genus to be recorded in Southeast Asia, with the other species *C. rossi* Olmi, 2005 recorded for Bangladesh, Malaysia and Singapore (OLMI 2005).

Caenosclerogibba longiceps parasitizes a wide range of webspinners of the families Oligotomidae and Embiidae (YOKOHAMA & TSUNEYOSHI 1958; YASUMATSU 1958; HE 1984; OLMI 2005). The collected samples parasitized *Oligotoma humbertiana* (Saussure, 1896), a species that is widely distributed within the country. *Oligotoma humbertiana* and *O. saundersii* (Westwood, 1873), other known hosts of *C. longiceps*, are suspected to have been introduced in the country from southern India (Ross 1955). Both species are largely distributed in the Philippines (LIT & LUCAÑAS 2014), which suggests that *C. longiceps* may be widespread within the country.

The oldest known record of fossil sclerogibbid wasp dates back to the early Cretaceous period (ENGEL & GRIMALDI 2006a), while that of webspinners dates back to the mid-Cretaceous (ENGEL & GRIMALDI 2006b). Based on its current distribution (Figure 5) and the fossil record, it can be hypothesized that the species evolved during the mid-Cretaceous, 94.0 MYA, when the subcontinents of India and Madagascar were still connected (SCOTSESE 1991). Then, when the Indian subcontinent collided with Mainland Asia, *C. longiceps* and its host expanded their range through natural or anthropogenic causes. Also, it could have been accidentally introduced to the Philippines through the early trades with India or China; and during the Spanish occupation of the Philippines, it could have been introduced with its host to Mexico and Ecuador through the Manila-Acapulco Galleon trade (Ross 1955), and perhaps to Yemen through the Europe-Suez Canal-Philippine route.

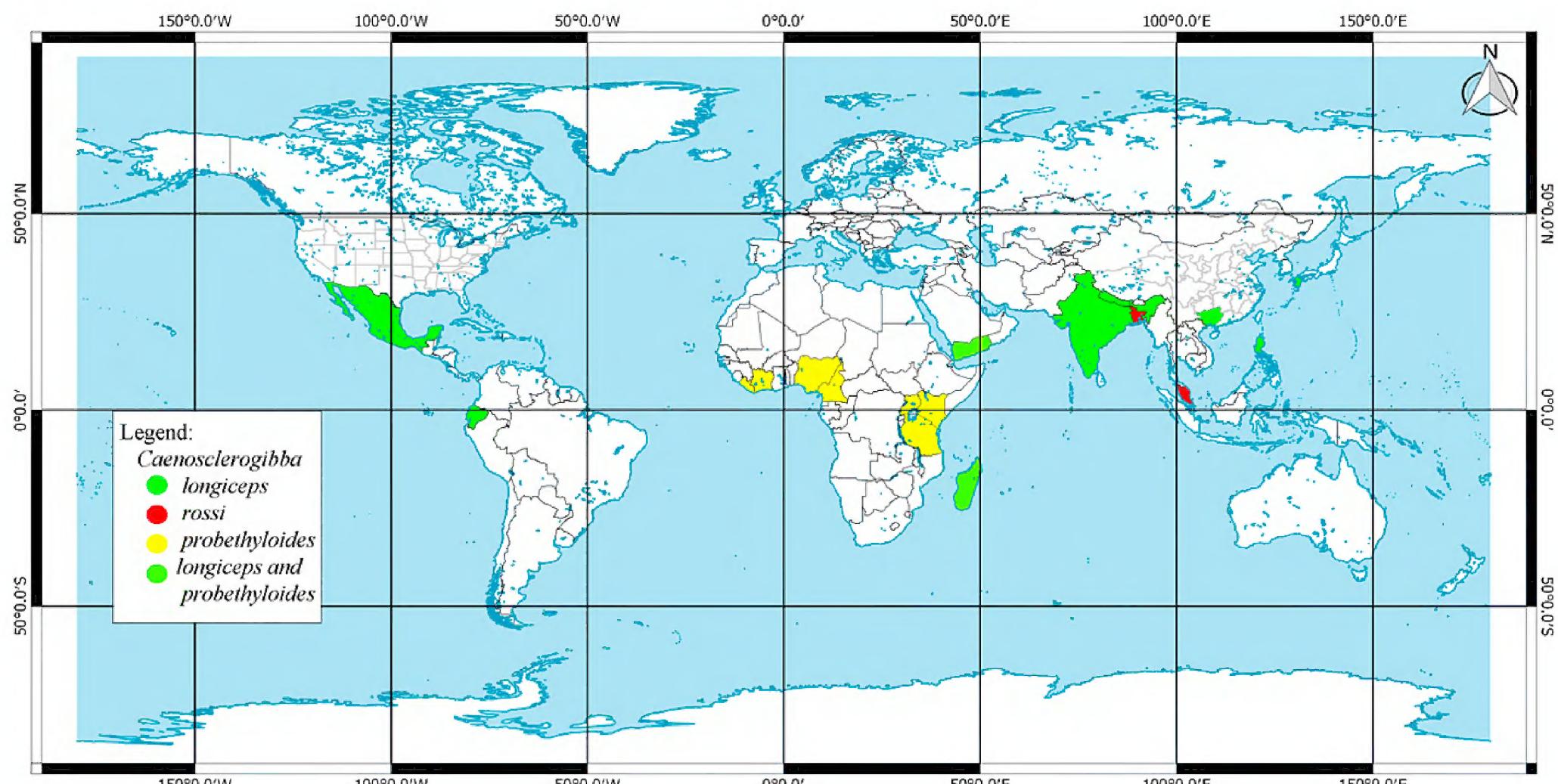


Figure 5. World distribution of the genus *Caenosclerogibba* Yasumatu, 1958.

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